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VISTA is the predominant 2nd generation of ICI (Immune Check-Point Inhibitor) in Ph (-) myeloproliferative Neoplasm

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Statement of the problem: There has been significant progress in immune checkpoint inhibitor (ICI) therapy in using anti-PD-1 and or anti-CTLA-4 in many solid tumor types. However, only a single failed study has been published in treating Ph (-) myeloproliferative neoplasm (MPN) (Mascarenhas et al 2020, Blood 2020, 135, supply, 1–60.). New inhibitory pathways are under investigation, and drugs blocking LAG-3, TIM-3, TIGIT, VISTA are being investigated and developed in treating other solid tumors. Therefore, to further possible advance ICI therapy in Ph (-) MPN, we measured these 2nd generation ICIs including LAG-3, TIM-3, TIGIT, VISTA in MPN cells.

Methods: Flow cytometric analysis of 2nd ICI Expression 1) on MDSC: blood MNC cells were gating of HLA-DR- CD14+ CD33+ as M-MDSC (monocytic MDSC), and HLA-DR- CD14- CD33+ as G-MDSC (granulocytic). 2) on Different population cells: Expression levels of the 2nd ICI on the CD3+, CD4+, CD8+, CD14+, CD34+, CD41a+, and CD71b+ were also assayed by flow cytometry .3) Human VSIG3 Fc treatment and T cell activation and proliferation: MNCs were cultured for three days with recombinant human VSIG3- IgG1 Fc chimera (R&D Systems). The CD3+ cells were stimulated with T-Activator CD3/CD28, and combined VSIG3-IgG1 Fc or IgG Fc

Conclusion: We analyzed the 2nd G of ICI in PH (-) MPN, we found there were a significant VISTA and not the others including LAG3, TIGIT, TIM3 expression on the MDSC and different cell population. We also demonstrated by adding VISTA specific ligand, T cell response were blunted. Further studies employing the VISTA antibody and siRNA are in progress. This will form the basis of employing anti-VISTA therapy in the future clinical trials of ICI therapy in Ph(-) MPN.

Biography

Jen-Chin Wang is a distinguished researcher at SUNY Downstate Health Sciences University in the USA, specializing in hematology and oncology, contributing to the advancement of cancer immunotherapy and improving patient outcomes in the field.